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L9	2	"fictitious" and ((volatage or current) same source) and adjoint and ("non-linear" or nonlinear)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/11 12:57
L10	2	"fictitious" and ((volatage or current) same source) and adjoint and (linear or "non-linear" or nonlinear)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/11 13:17
L11	51	((volatage or current) same source) and adjoint and (linear or "non-linear" or nonlinear)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/11 12:59

L12	4	((volatage or current) same source) same adjoint same (linear or "non-linear" or nonlinear)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/11 12:59
L13	14	("fictitious" or imaginary) and ((volatage or current) same source) and adjoint and ("non-linear" or nonlinear)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/11 13:17

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
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L2	0	(correction adj2 source) same adjoint	USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/11 14:34
L3	0	adjoint same nonlinear same fictitious	USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/11 14:35
L4	0	adjoint same nonlinear same voltage same current	USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/11 14:35
L5	10	adjoint same nonlinear	USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/11 14:36
L7	2461	blanks.in.	USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/11 14:43
L8	1	blanks.in. and adjoint	USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/11 14:43

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1 Low power synthesis of dual threshold voltage CMOS VLSI circuits

Vijay Sundararajan, Keshab K. Parhi

August 1999 **Proceedings of the 1999 international symposium on Low power electronics and design**

Full text available: pdf(751.10 KB) Additional Information: full citation, references, citings, index terms

2 Fuzzy logic applied to compensation equipment in power electronics

Jürgen Häfner, Hans H. Bothe, Klemens Heumann

February 1996 **Proceedings of the 1996 ACM symposium on Applied Computing**

Full text available: pdf(1.38 MB) Additional Information: full citation, references, index terms

Keywords: active power filter, active shunt compensation, fuzzy tuning, hybrid compensation system, power electronics

3 Digital Ground Bounce Reduction by Phase Modulation of the Clock

Mustafa Badaroglu, Piet Wambacq, Geert Van der Plas, Stéphane Donnay, Georges Gielen, Hugo De Man

February 2004 **Proceedings of the conference on Design, automation and test in Europe - Volume 1**

Full text available: pdf(671.02 KB) Additional Information: full citation, abstract, index terms

The digital switching noise that propagates through the chip substrate to the analog circuitry on the same chip is a major limitation for mixed-signal SoC integration. In synchronous digital systems, digital circuits switch simultaneously on the clock edge, hereby generating a large ground bounce. In order to reduce the spectral peaks in the ground bounce spectrum, we combine the two techniques: (1) phase modulation of the clock and (2) introducing intended clock skews to spread the switching ac ...

4 Waveform relaxation for concurrent dynamic simulation of distillation columns

A. Skjellum, M. Morari, S. Nattisson

January 1989 **Proceedings of the third conference on Hypercube concurrent computers and applications - Volume 2**

Full text available: pdf(878.57 KB) Additional Information: full citation, abstract, references, citings, index terms

The need for cost-effective, high-speed computing is essential in many aspects of chemical engineering practice, notably for the simulation of large-scale dynamic systems. The arrival of powerful, highly concurrent message-passing multicomputers potentially offers such economical large-scale computing capability [13,14]. Development of appropriate, efficient algorithms which realize this potential must therefore become an important area of ongoing research and development in chemical engine ...

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Relevance scale

1 Circuit optimization via adjoint Lagrangians

Andrew R. Conn, Ruud A. Haring, Chandu Visweswariah, Chai Wah Wu

November 1997 **Proceedings of the 1997 IEEE/ACM international conference on Computer-aided design**

Full text available: pdf(232.16 KB) Publisher Site

Additional Information: full citation, abstract, references, citings, index terms

The circuit tuning problem is best approached by means of gradient-based nonlinear optimization algorithms. For large circuits, gradient computation can be the bottleneck in the optimization procedure. Traditionally, when the number of measurements is large relative to the number of tunable parameters, the direct method is used to repeatedly solve the associated sensitivity circuit to obtain all the necessary gradients. Likewise, when the parameters outnumber the measurements, the adjoint method ...

Keywords: Circuit tuning, Optimization, Adjoint circuit, Augmented Lagrangian, Trust region, Circuit simulation

2 Time-domain non-Monte Carlo noise simulation for nonlinear dynamic circuits with arbitrary excitations

Alper Demir, Edward W. Y. Liu, Alberto L. Sangiovanni-Vincentelli

November 1994 **Proceedings of the 1994 IEEE/ACM international conference on Computer-aided design**

Full text available: pdf(840.83 KB)

Additional Information: full citation, abstract, references, citings, index terms

A new, time-domain, non-Monte Carlo method for computer simulation of electrical noise in nonlinear dynamic circuits with arbitrary excitations is presented. This time-domain noise simulation method is based on the results from the theory of stochastic differential equations. The noise simulation method is general in the sense that any nonlinear dynamic circuit with any kind of exci ...

3 RF design methodology: Analytical expressions for phase noise eigenfunctions of LC oscillators

Praveen Ghanta, Zheng Li, Jaijeet Roychowdhury

January 2004

Full text available: pdf(283.77 KB)

Additional Information: full citation, abstract, references

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We obtain analytical expressions for eigenfunctions that characterize the phase noise performance of generic LC oscillator structures. Using these, we also obtain analytical expressions for the timing jitter and spectrum of such oscillators. Our approach is based on identifying *three fundamental parameters*, derived from the oscillator's steady state, that characterize these eigenfunctions. Our analysis accounts for the nonlinear mechanism that stabilizes oscillator amplitudes. It also lay ...

4 Floorplanning and Postlayout Optimization: An algorithm for optimal decoupling capacitor sizing and placement for standard cell layouts

Haihua Su, Sachin S. Sapatnekar, Sani R. Nassif

April 2002 **Proceedings of the 2002 international symposium on Physical design**

Full text available: pdf(243.83 KB) Additional Information: full citation, abstract, references, citings, index terms

With technology scaling, the trend for high performance integrated circuits is towards ever higher operating frequency, lower power supply voltages and higher power dissipation. This causes a dramatic increase in the currents being delivered through the on-chip power grid and is recognized in the International Technology Roadmap for Semiconductors as one of the difficult challenges. The addition of decoupling capacitances (decaps) is arguably the most powerful degree of freedom that a designer h ...

Keywords: ASICs, adjoint sensitivity, decoupling capacitor, optimization, placement, power grid noise

5 Generation of optimum test stimuli for nonlinear analog circuits using nonlinear - programming and time-domain sensitivities

B. Burdiek

March 2001 **Proceedings of the conference on Design, automation and test in Europe**

Full text available: pdf(117.77 KB) Additional Information: full citation, references, index terms

6 Noise considerations in circuit optimization

Andrew R. Conn, Ruud A. Haring, Chandu Visweswariah

November 1998 **Proceedings of the 1998 IEEE/ACM international conference on Computer-aided design**

Full text available: pdf(785.81 KB) Additional Information: full citation, references, citings, index terms

7 Power grid analysis and design: A fast decoupling capacitor budgeting algorithm for robust on-chip power delivery

Jingjing Fu, Zuying Luo, Xianlong Hong, Yici Cai, Sheldon X.-D. Tan, Zhu Pan

January 2004

Full text available: pdf(206.84 KB) Publisher Site Additional Information: full citation, abstract, references

In this paper, we present an efficient method to budget on-chip decoupling capacitors (decaps) to optimize power delivery networks in an area efficient way. Our algorithm is based on an efficient gradient-based non-linear programming method for searching the solution. Our contributions are an efficient gradient computation method (time-domain merged adjoint network) and a novel equivalent circuit modeling technique to speed up the optimization process. Experimental results demonstrate that the a ...

8 Automatic differentiation in circuit simulation and device modeling
Peter Feldmann, Robert Melville, Shahriar Moinian
November 1992 **Proceedings of the 1992 IEEE/ACM international conference on Computer-aided design**
Full text available: pdf(716.55 KB) Additional Information: full citation, references, citings, index terms

9 Phase noise in oscillators: DAEs and colored noise sources
Alper Demir
November 1998 **Proceedings of the 1998 IEEE/ACM international conference on Computer-aided design**
Full text available: pdf(869.85 KB) Additional Information: full citation, references, citings, index terms

10 Power grid analysis and optimization: On-chip power supply network optimization using multigrid-based technique
Kai Wang, Malgorzata Marek-Sadowska
June 2003 **Proceedings of the 40th conference on Design automation**
Full text available: pdf(197.38 KB) Additional Information: full citation, abstract, references, citings, index terms

In this paper, we present a novel multigrid-based technique for on-chip power supply network optimization. We reduce a large-scale network to a much coarser one which can be efficiently optimized. The solution for the original network is then quickly computed using a back-mapping process. We model the power grid by an RLC network and use time-varying current sources to capture the on-chip switching. Our technique is capable of optimizing power grid and decoupling capacitance simultaneously. Expe ...

Keywords: congestion-aware, multigrid, power supply noise

11 Noise in deep submicron digital design
Kenneth L. Shepard, Vinod Narayanan
January 1997 **Proceedings of the 1996 IEEE/ACM international conference on Computer-aided design**
Full text available: pdf(255.49 KB) Publisher Site Additional Information: full citation, abstract, references, citings, index terms

As technology scales into the deep submicron regime, noise immunity is becoming a metric of comparable importance to area, timing, and power for the analysis and design of VLSI systems. This paper defines noise as it pertains to digital systems and addresses the technology trends which are bringing noise issues to the forefront. The noise sources which are plaguing digital systems are explained. A metric referred to as noise stability is defined, and a static noise analysis methodology based on ...

Keywords: noise, CMOS circuits, static analysis, crosstalk, inductance, noise margins

12 Optimization of custom MOS circuits by transistor sizing
Andrew R. Conn, Paula K. Coulman, Ruud A. Haring, Gregory L. Morrill, Chandu Visweswariah
January 1997 **Proceedings of the 1996 IEEE/ACM international conference on Computer-aided design**
Full text available:

pdf(68.85 KB) Additional Information: full citation, abstract, references, citings, index terms
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Optimization of a circuit by transistor sizing is often a slow, tedious and iterative manual process which relies on designer intuition. Circuit simulation is carried out in the inner loop of this tuning procedure. Automating the transistor sizing process is an important step towards being able to rapidly design high-performance, custom circuits. JiffyTune is a new circuit optimization tool that automates the tuning task. Delay, rise/fall time, area and power targets are accommodated. Each (weig ...

Keywords: Circuits, transistor sizing, optimization, simulation, gradients.

13 Parasitic analysis and control: Clock network sizing via sequential linear programming with time-domain analysis
Kai Wang, Malgorzata Marek-Sadowska
April 2004 **Proceedings of the 2004 international symposium on Physical design**

Full text available: pdf(188.78 KB) Additional Information: full citation, abstract, references, index terms

In this paper, we present a novel approach to the problem of clock skew minimization by buffer and wire sizing. The original nonlinear programming problem is transformed to a sequence of linear programs, by taking the first order Taylor's expansion of clock path delay with respect to buffer and wire widths. The sensitivities of clock path delay, with respect to buffer and wire widths, are efficiently updated for each linear program by applying time domain analysis to the clock network in a divid ...

Keywords: clock skew, sequential linear programming, sizing, time-domain analysis

14 New perspectives in physical design: Congestion-driven codesign of power and signal networks
Haihua Su, Jiang Hu, Sachin S. Sapatnekar, Sani R. Nassif
June 2002 **Proceedings of the 39th conference on Design automation**

Full text available: pdf(200.53 KB) Additional Information: full citation, abstract, references, citings, index terms

We present a global wire design methodology that simultaneously considers the performance needs for both signal lines and power grids under congestion considerations. An iterative procedure is employed in which the global routing is performed according to a congestion map that includes the resource utilization of the power grid, followed by a step in which the power grid is adjusted to relax the congestion in crowded regions. This adjustment is in the form of wire removal in noncritical regions, ...

Keywords: codesign, power grid noise, signal routing, wire congestion

15 Power and ground network topology optimization for cell based VLSIs
T. Mitsuhashi, E. S. Kuh
July 1992 **Proceedings of the 29th ACM/IEEE conference on Design automation**

Full text available: pdf(604.83 KB) Additional Information: full citation, references, citings, index terms

16 Session 10A: power analysis and optimization: Simulation and optimization of the power distribution network in VLSI circuits

G. Bai, S. Bobba, I. N. Hajj
November 2000 **Proceedings of the 2000 IEEE/ACM international conference on Computer-aided design**
Full text available: pdf(1.36 MB) Additional Information: full citation, abstract, references, citings

In this paper, we present simulation techniques to estimate the worst-case voltage variation using a RC model for the power distribution network. Pattern independent maximum envelope currents are used as a periodic input for performing the frequency-domain steady-state simulation of the linear RC circuit to evaluate the worst-case instantaneous voltage drop for the RC power distribution networks. The proposed technique unlike existing techniques, is guaranteed to give the maximum voltage drop at ...

17 A Hybrid Approach to Nonlinear Macromodel Generation for Time-Varying Analog Circuits
Peng Li, Xin Li, Yang Xu, Lawrence T. Pileggi
November 2003 **Proceedings of the 2003 IEEE/ACM international conference on Computer-aided design**
Full text available: pdf(312.78 KB) Additional Information: full citation, abstract, index terms

Modeling frequency-dependent nonlinear characteristics of complexanalog blocks and subsystems is critical for enabling efficientverification of mixed-signal system designs. Recent progress hasbeen made for constructing such macromodels, however, their accuracyand/or efficiency can break down for certain problems, particularlythose with high-Q filtering. In this paper we explore a novelhybrid approach for generating accurate analog macromodels fortime-varying weakly nonlinear circuits. The combin ...

18 Phase noise in oscillators: a unifying theory and numerical methods for characterisation
Alper Demir, Amit Mehrotra, Jaijeet Roychowdhury
May 1998 **Proceedings of the 35th annual conference on Design automation - Volume 00**
Full text available: pdf(522.91 KB) Publisher Site Additional Information: full citation, abstract, references, citings, index terms

Phase noise is a topic of theoretical and practical interest in electronic circuits, as well as in other fields such as optics. Although progress has been made in understanding the phenomenon, there still remain significant gaps, both in its fundamental theory and in numerical techniques for its characterisation. In this paper, we develop a solid foundation for phase noise that is valid for any oscillator, regardless of operating mechanism. We establish novel results about the dynamics of s ...

Keywords: design methodology, microprocessor, timing, verification

19 Automatic sizing of power/ground (P/G) networks in VLSI
R. Dutta, M. Marek-Sadowska
June 1989 **Proceedings of the 26th ACM/IEEE conference on Design automation**
Full text available: pdf(411.80 KB) Additional Information: full citation, abstract, references, citings, index terms

This paper presents a fast and efficient method for sizing power/ground networks. No restrictions on network topology or number of supplying pads are imposed. Wire widths are calculated such that the weighted area of wire segments is minimized while electromigration and voltage drops constraints are fulfilled. The algorithm proposed here runs 50% faster than the best methods reported for tree type network topologies.

20

Power grid design and analysis techniques: Buffer sizing for clock power minimization subject to general skew constraints

Kai Wang, Malgorzata Marek-Sadowska

June 2004 **Proceedings of the 41st annual conference on Design automation - Volume 00**

Full text available: pdf(193.65 KB) Additional Information: full citation, abstract, references, index terms

In this paper, we investigate the problem of buffer sizing for clock power minimization subject to general skew constraints. A novel approach based on sequential linear programming is presented. By taking the first-order Taylor's expansion of clock path delay with respect to buffer widths, the original nonlinear problem is transformed to a sequence of linear programs, which incorporate clock skew scheduling and buffer sizing to minimize clock power dissipation. For each linear program, the sensi ...

Keywords: clock skew scheduling, sequential linear programming, sizing

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1 A Survey of Resource Directive Decomposition in Mathematical Programming

Francisco Walter Molina

June 1979 **ACM Computing Surveys (CSUR)**, Volume 11 Issue 2

Full text available: pdf(929.30 KB) Additional Information: full citation, references, index terms

2 Texture mapping 3D models of real-world scenes

Frederick M. Weinhaus, Venkat Devarajan

December 1997 **ACM Computing Surveys (CSUR)**, Volume 29 Issue 4

Full text available: pdf(1.98 MB) Additional Information: full citation, abstract, references, index terms, review

Texture mapping has become a popular tool in the computer graphics industry in the last few years because it is an easy way to achieve a high degree of realism in computer-generated imagery with very little effort. Over the last decade, texture-mapping techniques have advanced to the point where it is possible to generate real-time perspective simulations of real-world areas by texture mapping every object surface with texture from photographic images of these real-world areas. The techniqu ...

Keywords: anti-aliasing, height field, homogeneous coordinates, image perspective transformation, image warping, multiresolution data, perspective projection, polygons, ray tracing, real-time scene generation, rectification, registration, texture mapping, visual simulators, voxels

3 Z-iteration: a simple method for throughput estimation in time-dependent multi-class systems

Ibrahim Matta, A. Udaya Shankar

May 1995 **ACM SIGMETRICS Performance Evaluation Review , Proceedings of the 1995 ACM SIGMETRICS joint international conference on Measurement and modeling of computer systems**, Volume 23 Issue 1

Full text available: pdf(1.03 MB) Additional Information: full citation, abstract, references, citings, index terms

Multiple-class multiple-resource (MCMR) systems, where each class of customers requires a particular set of resources, are common. These systems are often analyzed under steady-state conditions. We describe a simple method, referred to as *Z-iteration*, to estimate both

transient and steady-state performances of such systems. The method makes use of results and techniques available from queueing theory, network analysis, dynamic flow theory, and numerical analysis. We show the generality of ...

4 Budgeting, simulation and statistical timing: Statistical timing for parametric yield prediction of digital integrated circuits

J. A. G. Jess, K. Kalafala, S. R. Naidu, R. H. J. M. Otten, C. Visweswariah

June 2003 **Proceedings of the 40th conference on Design automation**

Full text available: pdf(130.79 KB) Additional Information: full citation, abstract, references, citings, index terms

Uncertainty in circuit performance due to manufacturing and environmental variations is increasing with each new generation of technology. It is therefore important to predict the performance of a chip as a probabilistic quantity. This paper proposes three novel algorithms for *statistical timing analysis* and parametric yield prediction of digital integrated circuits. The methods have been implemented in the context of the EinsTimer static timing analyzer. Numerical results are presented t ...

Keywords: statistical timing, yield prediction

5 Analysis of directory based cache coherence schemes with multistage networks

Ashwini K. Nanda, Hong Jiang

April 1992 **Proceedings of the 1992 ACM annual conference on Communications**

Full text available: pdf(844.74 KB) Additional Information: full citation, abstract, references, citings, index terms

Designing efficient cache coherence schemes for shared memory multiprocessors has attracted much attention of the researchers in the area. Snoopy cache protocols have been designed for bus based multiprocessors. However, the snoopy protocols are not applicable to general interconnection networks. On the other hand, the directory based cache protocols adapt very well to any kind of interconnection network such as a Multistage Network. Since different protoco ...

6 SMART: statistically multiplexed adaptive routing technique for ad hoc networks

Sarvesh S. Kulkarni, G. R. Dattatreya

March 2004 **Wireless Networks**, Volume 10 Issue 2

Full text available: pdf(214.55 KB) Additional Information: full citation, abstract, references, index terms

This paper develops a common solution to the problems of discovery, maintenance, and use of multiple routes in ad hoc networks. The performance criterion is the average time taken by a packet to reach its destination through multiple hops. A source node considers each of its neighbors (reachable by direct wireless transmission) as a next-hop for every possible destination. The effect of delay at a next-hop and beyond, until the packet reaches its destination, is approximately modeled as an equiv ...

Keywords: ad hoc networks, adaptive routing, equivalent queuing systems, multihop routing, self-similar traffic, statistical multiplexing

7 Robustness of real and virtual queue-based active queue management schemes

Ashvin Lakshmikantha, Carolyn L. Beck, R. Srikant

February 2005 **IEEE/ACM Transactions on Networking (TON)**, Volume 13 Issue 1

Full text available: pdf(538.59 KB) Additional Information: full citation, abstract, references, index terms

In this paper, we evaluate the performance of both real and virtual queue-based marking

schemes designed for use at routers in the Internet. Using fluid flow models, we show via analysis and simulations that Virtual Queue (VQ)-based marking schemes outperform Real Queue (RQ)-based marking schemes in terms of robustness to disturbances and the ability to maintain low queueing delays. In fact, we prove that a linearized model of RQ-based marking schemes exhibit a lack of robustness to constant but ...

Keywords: active queue management, congestion control, fluid-flow analysis

8 Multicast and antennas: Antenna orientation optimization for minimum-energy multicast tree construction in wireless ad hoc networks with directional antennas

S. Guo, O. W. Yang

May 2004 **Proceedings of the 5th ACM international symposium on Mobile ad hoc networking and computing**

Full text available: pdf(328.65 KB) Additional Information: full citation, abstract, references, citings, index terms

Energy conservation is a critical issue in wireless ad hoc networks since batteries are the only energy source to power the nodes. One major metric for energy conservation is to route a communication session along the routes which require the lowest total.

Keywords: directional antenna, integer programming, minimum-energy routing, multicast tree, wireless ad hoc networks

9 Multi-hour, multi-traffic class network design for virtual path-based dynamically reconfigurable wide-area ATM networks

D. Medhi

December 1995 **IEEE/ACM Transactions on Networking (TON)**, Volume 3 Issue 6

Full text available: pdf(1.12 MB) Additional Information: full citation, references, citings, index terms

Keywords: duality and subgradient optimization, dynamic virtual path routing, multi-hour network capacity design, on-off fluid flow model, optimization model, wide-area ATM networks

10 Stable but responsive cloth

Kwang-Jin Choi, Hyeong-Seok Ko

July 2002 **ACM Transactions on Graphics (TOG) , Proceedings of the 29th annual conference on Computer graphics and interactive techniques**, Volume 21 Issue 3

Full text available: pdf(924.24 KB) Additional Information: full citation, abstract, references, citings, index terms

We present a semi-implicit cloth simulation technique that is very stable yet also responsive. The stability of the technique allows the use of a large fixed time step when simulating all types of fabrics and character motions. The animations generated using this technique are strikingly realistic. Wrinkles form and disappear in a quite natural way, which is the feature that most distinguishes textile fabrics from other sheet materials. Significant improvements in both the stability and realism ...

Keywords: deformations, numerical analysis, physically based animation, physically based modeling

11

Earthquake ground motion modeling on parallel computers
Hesheng Bao, Jacobo Bielak, Omar Ghattas, Loukas F. Kallivokas, David R. O'Hallaron, Jonathan R. Shewchuk, Jifeng Xu
November 1996 **Proceedings of the 1996 ACM/IEEE conference on Supercomputing (CDROM) - Volume 00**
Full text available: html(65.97 KB) Additional Information: full citation, abstract, references, citings, index terms

We describe the design and discuss the performance of a parallel elastic wave propagation simulator that is being used to model and study earthquake-induced ground motion in large sedimentary basins. The components of the system include mesh generators, a mesh partitioner, a parceler, and a parallel code generator, as well as parallel numerical methods for applying seismic forces, incorporating absorbing boundaries, and solving the discretized wave propagation problem. We discuss performanc ...

12 An interval constraint system for lattice domains
Antonio J. Fernández, Patricia M. Hill
January 2004 **ACM Transactions on Programming Languages and Systems (TOPLAS)**, Volume 26 Issue 1
Full text available: pdf(378.80 KB) Additional Information: full citation, abstract, references, index terms

We present a generic framework for defining and solving interval constraints on any set of domains (finite or infinite) that are lattices. The approach is based on the use of a single form of constraint similar to that of an indexical used by CLP for finite domains and on a particular generic definition of an interval domain built from an arbitrary lattice. We provide the theoretical foundations for this framework and a schematic procedure for the operational semantics. Examples are provided tha ...

Keywords: Constraint, cooperation, indexicals, lattice, propagation

13 Fuzzy logic applied to compensation equipment in power electronics
Jürgen Häfner, Hans H. Bothe, Klemens Heumann
February 1996 **Proceedings of the 1996 ACM symposium on Applied Computing**
Full text available: pdf(1.38 MB) Additional Information: full citation, references, index terms

Keywords: active power filter, active shunt compensation, fuzzy tuning, hybrid compensation system, power electronics

14 Waveform relaxation for concurrent dynamic simulation of distillation columns
A. Skjellum, M. Morari, S. Nattisson
January 1989 **Proceedings of the third conference on Hypercube concurrent computers and applications - Volume 2**
Full text available: pdf(878.57 KB) Additional Information: full citation, abstract, references, citings, index terms

The need for cost-effective, high-speed computing is essential in many aspects of chemical engineering practice, notably for the simulation of large-scale dynamic systems. The arrival of powerful, highly concurrent message-passing multicomputers potentially offers such economical large-scale computing capability [13,14]. Development of appropriate, efficient algorithms which realize this potential must therefore become an important area of ongoing research and development in chemical engine ...

15 An adaptive virtual queue (AVQ) algorithm for active queue management

Srisankar S. Kunniyur, R. Srikant
April 2004 **IEEE/ACM Transactions on Networking (TON)**, Volume 12 Issue 2
Full text available: pdf(729.12 KB) Additional Information: full citation, abstract, references, index terms

Virtual queue-based marking schemes have been recently proposed for Active Queue Management (AQM) in Internet routers. We consider a particular scheme, which we call the Adaptive Virtual Queue (AVQ), and study its following properties: its stability in the presence of feedback delays, its ability to maintain small queue lengths, and its robustness in the presence of extremely short flows (the so-called web mice). Using a linearized model of the system dynamics, we present a simple rule to design ...

Keywords: ECN marking, active queue management (AQM), internet congestion control

16 A new approach to service provisioning in ATM networks
Steven H. Low, Pravin P. Varaiya
October 1993 **IEEE/ACM Transactions on Networking (TON)**, Volume 1 Issue 5
Full text available: pdf(955.98 KB) Additional Information: full citation, references, citings, index terms

17 Modeling I/O systems with dynamic path selection, and general transmission networks
Yonathan Bard
August 1982 **ACM SIGMETRICS Performance Evaluation Review , Proceedings of the 1982 ACM SIGMETRICS conference on Measurement and modeling of computer systems**, Volume 12 Issue 3
Full text available: pdf(843.06 KB) Additional Information: full citation, abstract, references

This paper examines general transmission networks, of which I/O subsystems are a special case. By using the maximum entropy principle, we answer questions such as what is the probability that a path to a given node is free when that node is ready to transmit. Systems with both dynamic and fixed path selection mechanisms are treated. Approximate methods for large networks are proposed, and numerical examples are given.

18 Low power synthesis of dual threshold voltage CMOS VLSI circuits
Vijay Sundararajan, Keshab K. Parhi
August 1999 **Proceedings of the 1999 international symposium on Low power electronics and design**
Full text available: pdf(751.10 KB) Additional Information: full citation, references, citings, index terms

19 Multiresolution analysis of arbitrary meshes
Matthias Eck, Tony DeRose, Tom Duchamp, Hugues Hoppe, Michael Lounsbery, Werner Stuetzle
September 1995 **Proceedings of the 22nd annual conference on Computer graphics and interactive techniques**
Full text available: pdf(1.20 MB) Additional Information: full citation, references, citings, index terms

Keywords: geometric modeling, subdivision surfaces, wavelets

20 Simulated circulation in the Indonesian archipelago from a high resolution global ocean general circulation model on the numerical wind tunnel

Yukio Masumoto, Takashi Kagimoto, Toshio Yamagata, Masahiro Yoshida, Masahiro Fukuda, Naoki Hirose

January 1999 **Proceedings of the 1999 ACM/IEEE conference on Supercomputing (CDROM)**

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Virginia Nather, Ward Sangren

January 1959 **Communications of the ACM**, Volume 2 Issue 1

Full text available: pdf(3.51 MB) Additional Information: full citation

2 Stable but nondissipative water

Oh-Young Song, Hyuncheol Shin, Hyeong-Seok Ko

January 2005 **ACM Transactions on Graphics (TOG)**, Volume 24 Issue 1

Full text available: pdf(156.04 KB) Additional Information: full citation, abstract, references, index terms

This article presents a physically-based technique for simulating water. This work is motivated by the "stable fluids" method, developed by Stam [1999], to handle gaseous fluids. We extend this technique to water, which calls for the development of methods for modeling multiphase fluids and suppressing dissipation. We construct a multiphase fluid formulation by combining the Navier--Stokes equations with the level set method. By adopting constrained interpolation profile (CIP)-based advection ...

Keywords: CIP method, Navier--Stokes equation, multiphase fluid, natural phenomena, physically based animation, semi-Lagrangian method, stable fluids, water

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